

5,269,762	12/1993	Armbruster et al.	604/131
5,354,273	10/1994	Hagen.....	604/67

In the Claims:

Please amend original claims 1, 7 and 22 in U.S. Patent No. 5,494,036 as follows:

1. (Amended) A patient infusion control apparatus for use in a magnetic resonance imaging apparatus to generate images of a patient, the patient infusion control apparatus comprising:

- a) means for injecting fluid into the patient undergoing a MRI procedure;
- b) an electric drive motor and motor control circuitry positioned remotely from the means for injecting to be substantially non-reactive with an electromagnetic field of the imaging apparatus; [and]
- c) a non-rigid drive connection between the electric drive motor and the means for injecting comprising a flexible drive shaft; and
- d) at least one battery for powering the motor control circuitry and the electric drive motor and for minimizing electromagnetic interference with the magnetic resonance imaging apparatus.

7. (Amended) The patient infusion control apparatus of claim 1[, further comprising] wherein the at least one battery comprises a rechargeable battery [wherein the electric drive motor receives power from the rechargeable battery].

22. (Amended) A method of patient infusion for use with a magnetic resonance imaging system, the method comprising the steps of:

- a) providing patient infusion apparatus having a patient infusion apparatus controller and means operable to inject fluid into a patient;
- b) positioning the patient infusion apparatus controller away from the patient infusion apparatus to prevent interference in the image, the infusion apparatus controller including at least one electric motor and motor control circuitry, at least one battery for powering the motor control circuitry and the at least one motor and for minimizing electromagnetic interference with the magnetic resonance imaging system and the motor control circuitry; and
- c) operably connecting the electric motor for controlling the patient infusion apparatus to the patient infusion apparatus with a non-rigid drive connection, the electric motor operating the patient infusion apparatus to infuse media into a patient.

Please add the following new claims:

24. A method of patient infusion for use with a magnetic resonance imaging system, the method comprising:
- providing an infusion apparatus positioned within a room shielded from electromagnetic interference, the infusion apparatus comprising an injector for injecting fluid into patients during magnetic resonance imaging procedures and at least one battery for powering control circuitry and a drive mechanism of the injector and for minimizing electromagnetic interference with the magnetic resonance imaging system;

energizing the injector to inject fluid into one or more patients until the charge of the battery is substantially depleted; and

replacing the substantially depleted battery with a charged battery to energize the injector.

25. The method of claim 24, further comprising:

providing a system controller positioned external to the shielded room and in communication with the infusion apparatus for controlling the operation thereof, the system controller comprising a battery charger for charging batteries substantially depleted of charge by the injector.

26. A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:

an infusion apparatus positioned within a room shielded from electromagnetic interference, the infusion apparatus operable to inject fluid into a patient during a magnetic resonance imaging procedure;

a battery for powering the infusion apparatus without substantial interference with the magnetic resonance imaging system; and

a system controller positioned external to the shielded room and in communication with the infusion apparatus for controlling the operation thereof.

27. The patient infusion system of claim 26 wherein the battery is rechargeable.

28. The patient infusion system of claim 26 wherein the system controller comprises a battery charger for recharging batteries depleted of charge by the injector.

29. The patient infusion system of claim 26 wherein the infusion apparatus comprises an injector and a control unit.

A4 30. The patient infusion system of claims 29 wherein the injector and the control unit are separate units.

31. The patient infusion system of claim 30 wherein the injector and the control unit are connected by a non-rigid drive connection.

32. The patient infusion system of claim 30 wherein the control unit is remotely positioned from the injector.

33. The patient infusion system of claim 26 wherein the infusion apparatus is adapted to accommodate at least two syringes mounted thereon.

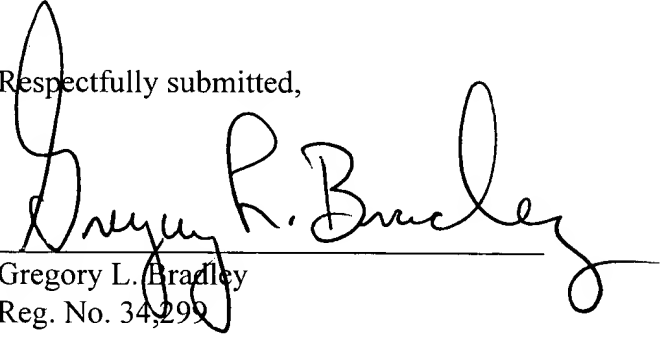
34. The patient infusion system of claim 26 wherein the infusion apparatus and the system controller communicate with each other by means of a communication link disposed therebetween.

Status of and Support for the Claims:

Original claims 1-23 are pending in the application.

New claims 24-34 have been added by this Preliminary Amendment. Claims 24 and 25 are supported by at least Col. 2, lines 53-59 and Col. 4, lines 1-3, of the specification and Figures 1 and 2 of the drawings. Claims 26-34 are supported by at least Col. 3, lines 42-67 and Col. 4, lines 1-3 and 11-26 of the specification and Figures 1 and 2 of the drawings.

Respectfully submitted,



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